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Operative Report

Name of Patient: Dianna Berry

Date of Operation: 5-13-05

Surgeon: Dr. Stuart Kauffman

Time Started: 9:30am

Time Completed: 10:30am

Area of Surgery: The medial border of the scapula at the most inferior aspect (medial border is divided into superior, middle and inferior aspect) on the right the unmyelinated sensory terminal nerve endings (sprouts) of the dorsal scapular nerves and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the osseous insertions of the Inferior rhomboid major and infraspinatus muscles.

Total # of Procedures: 8

Total # of Lesions: 8

Fluoroscopic evaluation: 8 views

Length of Cannula: 5 cm

Anesthesia: Marcaine 0.5%, 5 cc

Medical History: Dianna reports that her worst pain is in her lower back, hip, jaw, ears, neck, and shoulder. The pain is described as constant and pulsating. The pain starts in her neck and radiates to her head. The pain occurs when she wakes up, sitting, reading, and while sleeping. Dianna gets headaches 2 times a week, they are in the back of her head on the right. Her jaw pain occurs also when she eats, yawn, swallow, and chew. She has pain in her neck when she raises her arms and lifts anything.

Dianna's lower back pain and hip pain hurt the most when she bends down or twist. When the pain starts in her back then radiating to her hip and leg. Dianna has had these areas of pain for 6 years.

Dianna was seen by Dr. Santelli, chiropractor and Dr. Heine, MD. She had a MRI done of her neck and shoulder, results are unknown.



Dr. Stuart Kauffman

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Pre-operative interview: Dianna was interviewed and the procedure was re-explained. An update of the original chief complaints of the patient were: right shoulder pain from 4 out of 10 to 3 out of 10. Dianna reported that the prior radiofrequency procedure reduced her right bicep tendon pain.

After the clinical examination, the most prominent area of tenderness that correlated with the pain patterns of the existing chief complaints was selected. A fluoroscopic picture demonstrated that the tender area was the region of the osseous insertions of the Inferior rhomboid major and infraspinatus muscle to the medial border of the scapula at the most inferior aspect (medial border is divided into superior, middle and inferior aspect) on the right. A prognostic block, precisely at this site, was performed under fluoroscopic guidance with a limited volume of anesthetic solution, 1 cc, to prevent the masking of any surrounding structures. Immediately the right shoulder/neck pain decreased from a 3 out of 10 to a 1 out of 10. Evaluation of the appropriate indications for radiofrequency surgery was completed by the comprehensive relief of associated pain patterns confirming the success of the prognostic block.

Pre-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the dorsal scapular nerves and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion on the right, to the osseous insertions of the Inferior rhomboid major and infraspinatus muscles at medial border of the scapula at the most inferior aspect.

Post-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the dorsal scapular nerves and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion on the right, to the osseous insertions of the Inferior rhomboid major and infraspinatus muscles at medial border of the scapula at the most

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Inferior aspect.

Operation: Transection of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the dorsal scapular nerves on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion to the osseous insertions of the Inferior rhomboid major and infraspinatus muscles using a RFG-8 radiofrequency generator with a SMK-TC (5) thermocouple electrode.

Description of Procedure:

The patient was prepped and draped in the normal fashion for this type of procedure.

1.0 cc of 5% marcaine solution was injected into the tissue with the point of the needle being held in contact with the bone and periosteum. An SMK-C (5) 5 cm insulated cannula with 4mm working end was then inserted into the tissue until it was in contact with the bone at the site of the osseous insertions of the rhomboid major and rhomboid minor muscles at the medial border of the Scapula on the most inferior aspect on the right with the solid stylet in place. The solid stylet was removed from the SMK-C (5) insulated cannula and an SMK-TC (5) thermocouple electrode was inserted in its place. The position of the tip of the cannula and the electrode was evaluated under fluoroscopy. The position of the tip was found to be in the desired place to perform the intended cautery. The RFG-8 radiofrequency generator was turned on and the mode selector knob was set on stim mode. The output lever switch was turned on. The frequency was set at 2 Hertz. The stimulation voltage knob was slowly advanced to 2 1/2 volts. Attention was directed to see if any motor nerves were being stimulated, which is manifested by twitching muscles in that area. Close observation revealed no reaction. The voltage stimulation knob was returned to zero. The output lever switch was turned off. The mode selector knob was turned to lesion. The output lever switch was again turned on. The RF power knob was slowly advanced until the temperature reached 80 degrees centigrade for 60 seconds. The RF power knob was returned to zero. The output lever switch was turned off. The mode selector switch was turned off.

The entire procedure was performed 8 times. Each time the SMK-TC (5) thermocouple electrode and the SMK-C (5) insulated cannula were withdrawn,

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reinserted and redirected into an unrelated tissue track to independently create another lesion. Reevaluation by fluoroscopy and stimulation to determine that the new location was appropriate and distinctly different from any prior lesion placement. The 8 lesions were arranged in a vertical alignment, superiorly and inferiorly, at the medial osseous border of the scapula on the most inferior aspect on the right, with even distribution while in contact with the osseous surface for the purpose of pain reception ablation of the unmyelinated sensory terminal nerve endings (sprouts) of the dorsal scapular nerves and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the insertions of the inferior rhomboid major and infraspinatus muscles. A total of 8 procedures were performed on the medial border of the scapula.

An RFG 8 Radionics generator, with a continuous revolving clock face 60 second timer, was utilized. When the 80 degree C lesion temperature was achieved, the position of the second hand was noted, and the temperature was held for one complete minute. The starting times were recorded and documented in the patient's records. The rise of the thermotrol to an 80 degree temperature was achieved in a gradual manner, usually taking 5-10 seconds. Allowing for the different starting times due to the use of the continuous revolving clock face 60 second timer, the differences in time of each lesion production at various sites, pain elicitation, patient movement, operator observance and monitoring of treatment protocol, the starting times may vary from lesion to lesion. The starting times of the 60 second cycles for each lesion are as follows:

1. 55	6. 50
2. 10	7. 0
3. 20	8. 10
4. 30	
5. 40	

Surgical Completion

Dianna was given an appropriate review of post-operative instructions, including administration of pain and antibiotic medication, application of cold pak, and additional directions regarding observance of any untoward reactions (fever, bleeding, excessive swelling) from surgery with advisement to call

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immediately. All muscles were functioning normally and the patient was dismissed. Dianna has a scheduled future appointment with The Pain Center.

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Re: Dianna Berry

To whom it may concern:

I have thoroughly read and reviewed all prior reports and treatment records of this patient that are presently available. Dianna presents today with a complaint of right shoulder and neck pain. She states that the pain in her right shoulder and neck is a 3 out of 10. Her last RFS was to the right bicep tendon. Today we elected to treat her right shoulder pain.

The procedure for performing diagnostic blocks as well as the radiofrequency therapy itself, alternative therapies and possible complications were discussed with the patient. Then Dianna agreed to undergo a prognostic block. The most tender area was found to be the right medial scapula spin. The skin over this area was anesthetized with a skin wheel of half-percent Marcaine. A 25-gauge needle was advanced through the skin wheel, through the tissue, under fluoroscopic examination in this area. One cc of half-percent Marcaine was deposited, and within 3 minutes of the placement of this local anesthetic, Dianna expressed that the pain had decreased from a 3 out of 10 to a 1 out of 10.

This response is interpreted as a significant response to the placement of the local anesthetic. It is also concluded that an injury in that area is the cause of either all or some of the pain that the patient was complaining about. That response is certainly consistent with the ingrowth of nerve endings also known as sprout formation which was described by Wayne B. Leadbetter, MD, in the Journal Clinics In Sports Medicine, volume 11 #3 of July 1992. Such nerve ingrowth was also described by AJ Freemont, et al, in The Lancet Journal, volume 350 pages 198-181 in 1997. Tendon and ligament insertion injuries have been described as a source of possible musculoskeletal pain by Peter D. Palesy in the Journal Of Cranial Mandibular Practice, volume 15 #3 of July 1997.

Therefore, the radiofrequency procedure was recommended to Dianna, who did consent to undergo such therapy. Utilizing 5 cc of half-percent Marcaine, 8 radiofrequency lesions were produced in the manner described earlier by Horst Blume, et al.

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Dianna tolerated this procedure well, with the plan to return in one week's time for further evaluation. I concur that the diagnosis of muscle injury is triggering the pain. The previous radiofrequency procedures have successfully reduced pain and it has been determined that it is appropriate to continue with the same treatment plan.

Thank you,

Dr. Stuart Kauffman

Dictated not read
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Operative Report

Name of Patient: Dianna Berry

Date of Operation: 5-20-05

Surgeon: Dr. Stuart Kauffman

Time Started: 9:30am

Time Completed: 10:30am

Area of Surgery: The superior border of the spine of the scapula at the most middle aspect (superior border is divided into medial, middle and lateral aspect) on the right the unmyelinated sensory terminal nerve endings (sprouts) of the axillary nerve and the bilateral sympathetic terminal nerve endings (sprouts) of the cervical and thoracic sympathetic ganglion in the osseous insertions of the trapezius muscle.

Total # of Procedures: 8

Total # of Lesions: 8

Fluoroscopic evaluation: 8 views

Length of Cannula: 5 cm

Anesthesia: Marcaine 0.5%, 5 cc

Medical History: Dianna reports that her worst pain is in her lower back, hip, jaw, ears, neck, and shoulder. The pain is described as constant and pulsating. The pain starts in her neck and radiates to her head. The pain occurs when she wakes up, sitting, reading, and while sleeping. Dianna gets headaches 2 times a week, they are in the back of her head on the right. Her jaw pain occurs also when she eats, yawn, swallow, and chew. She has pain in her neck when she raises her arms and lifts anything.

Dianna's lower back pain and hip pain hurt the most when she bends down or twist. When the pain starts in her back then radiating to her hip and leg. Dianna has had these areas of pain for 6 years.

Dianna was seen by Dr. Santelli, chiropractor and Dr. Heine, MD. She had a MRI done of her neck and shoulder, results are unknown.


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Pre-operative interview: Dianna was interviewed and the procedure was re-explained. An update of the original chief complaints of the patient were: right scapular pain. Dianna reported that the prior radiofrequency procedure reduced her medial superior scapula pain.

The most prominent area of tenderness that correlated with the existing chief complaints was determined during the palpation examination and selected. A fluoroscopic picture demonstrated that the tender area was the region of the insertion of the trapezius muscle to the most middle aspect of the superior border of the spine of the scapula on the right. A prognostic block at the insertion of the trapezius muscle to the most middle aspect of the spine of the superior border of the scapula on the right was performed under fluoroscopic guidance with a limited volume of anesthetic solution, 1 cc, to prevent the masking of any surrounding structures. The prognostic block performed at insertion of the trapezius muscle to the most middle aspect of the spine of the superior border of the scapula on the right decreased the right scapular pain from 3-4 out of 10 to a 0 out of 10. Evaluation of the appropriate indications for surgery was completed by the comprehensive relief of associated pain patterns confirming the success of the prognostic block.

Pre-operative Diagnosis:

(1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the axillary nerve and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the cervical and thoracic sympathetic ganglion on the right, to the osseous insertions of the trapezius muscle on the superior border of the spine of the scapula in the most middle aspect.

Post-operative Diagnosis:

(1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the axillary nerve and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the cervical and thoracic sympathetic ganglion on the right, to the osseous insertions of the trapezius

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muscle on the superior border of the spine of
the scapula in the most middle aspect.

Operation: Transection of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the axillary nerve and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the cervical and thoracic sympathetic ganglion to the osseous insertions of the trapezius muscle to the most middle aspect of the superior border of the spine of the scapula on the right using a OWL radiofrequency generator with a SMK-TC (5) thermocouple electrode.

Description of Procedure:

The head was prepped and draped in the normal fashion for this type of procedure.

1.0 cc of 5% marcaine solution was injected into the tissue with the point of the needle being held in contact with the bone and periosteum. An SMK-C (5) 5 cm insulated cannula with 4mm working end was then inserted into the tissue until it was in contact with the bone at the site of the superior border of the spine of the scapula on the most middle aspect on the right with the solid stylet in place. The solid stylet was removed from the SMK-C (5) insulated cannula and an SMK-TC (5) thermocouple electrode was inserted in its place. The position of the tip of the cannula and the electrode was evaluated under fluoroscopy. The position of the tip was found to be in the desired place to perform the intended cautery. The OWL radiofrequency generator was turned on and the mode selector knob was set on stim mode. The output lever switch was turned on. The frequency was set at 2 Hertz. The stimulation voltage knob was slowly advanced to 2 1/2 volts. Attention was directed to see if any motor nerves were being stimulated, which is manifested by twitching muscles in that area. Close observation revealed no reaction. The voltage stimulation knob was returned to zero. The output lever switch was turned off. The mode selector knob was turned to lesion. The output lever switch was again turned on. The RF power knob was slowly advanced until the temperature reached 80 degrees centigrade for 60 seconds. The RF power knob was returned to zero. The output lever switch was turned off.

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The entire procedure was performed 8 times. Each time the SMK-TC (5) thermocouple electrode and the SMK-C (5) insulated cannula were withdrawn, reinserted and redirected into an unrelated tissue track to independently create another lesion. Reevaluation by fluoroscopy and stimulation to determine that the new location was appropriate and distinctly different from any prior lesion placement. The 8 lesions were arranged in one horizontal row, laterally and medially, at the most middle aspect on the superior osseous border of the spinous process, with even distribution while in contact with the osseous surface at the insertion of the trapezius muscle for the purpose of pain reception ablation of the unmyelinated sensory terminal nerve endings (sprouts) of the axillary nerve and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the cervical and thoracic sympathetic ganglion in the insertions of the trapezius muscle on the right. A total of 8 procedures were performed on the most middle aspect on the superior border of the spine of the scapula.

An Owl generator, with an automatic timer was utilized. The timer was set to 70 seconds. The rise of the thermotrol to an 80 degree temperature was achieved in a gradual manner, usually taking 5-10 seconds. The temperature was held for one complete minute. The lesions numbers were recorded in numerical order and documented in the patients records. Respectively, the following reflects the record of the lesions performed on the patient as recorded by the surgeon in the operative notes. Because the Owl generator utilizes an automatic timer, each lesion has identical timing. To conform with the operative notes as written by the surgeon, who places a check next to each lesion number as it is performed, a similar list follows to reflect the operative notes.

- | | |
|------|------|
| 1. ✓ | 6. ✓ |
| 2. ✓ | 7. ✓ |
| 3. ✓ | 8. ✓ |
| 4. ✓ | |
| 5. ✓ | |

Surgical Completion

Dianna was given an appropriate review of post-operative instructions, including administration of pain and antibiotic medication, application of cold pak, and additional directions regarding observance of any untoward reactions (fever, bleeding, excessive swelling) from surgery with advisement to call

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immediately. All muscles were functioning normally and the patient was dismissed. Dianna has a scheduled future appointment with The Pain Center.

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Operative Report

Name of Patient: Dianna Berry

Date of Operation: 5-23-05

Surgeon: Dr. Stuart Kauffman

Time Started: 9:30 am

Time Completed: 10:30 am

Area of Surgery: The medial aspect of the 3rd rib on the right, the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerve, long thoracic and intercostal nerves and the medial sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the insertions of the external oblique muscle, serratus anterior muscle and external intercostal muscles.

Total # of Procedures: 8

Total # of Lesions: 8

Fluoroscopic evaluation: 8 views

Length of Cannula: 5 cm

Anesthesia: Marcaine 0.5%, 5 cc

Medical History: Dianna reports that her worst pain is in her lower back, hip, jaw, ears, neck, and shoulder. The pain is described as constant and pulsating. The pain starts in her neck and radiates to her head. The pain occurs when she wakes up, sitting, reading, and while sleeping. Dianna gets headaches 2 times a week, they are in the back of her head on the right. Her jaw pain occurs also when she eats, yawn, swallow, and chew. She has pain in her neck when she raises her arms and lifts anything.

Dianna's lower back pain and hip pain hurt the most when she bends down or twist. When the pain starts in her back then radiating to her hip and leg. Dianna has had these areas of pain for 6 years.



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Dianna was seen by Dr. Santelli, chiropractor and Dr. Heine, MD. She had a MRI done of her neck and shoulder, results are unknown.

Pre-operative interview: Dianna was interviewed and the procedure was re-explained. An update of the original chief complaints of the patient were: right shoulder pain 3 out of 10 (intermittent) to a 3 out of 10. Patient states she has soreness on bicep tendon. Dianna reported that the prior radiofrequency procedure reduced her right medial border of scapula pain. She follows sleeping position.

The most prominent area of tenderness that correlated with the existing chief complaints was determined during the palpation examination and selected. A fluoroscopic picture demonstrated that the tender area was the region of the medial aspect of the 3 rib on the right. A prognostic block was performed under fluoroscopic guidance with a limited volume of anesthetic solution, 1 cc, to prevent the masking of any surrounding structures. The prognostic block performed at the 3rd rib on the right decreased the right upper trapezius pain from 3 out of 10 to a 0 out of 10, and the right mid-shoulder pain from 3 out of 10 to a 0 out of 10. Evaluation of the appropriate indications for surgery was completed by the comprehensive relief of associated pain patterns confirming the success of the prognostic block.

Pre-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerves, long thoracic nerves and the intercostal nerves of the thoracic on the right, and the medial sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and the external intercostal muscles insertions at the right 3rd rib.

Post-operative Diagnosis:

- (1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the lower thoracic nerves, long thoracic nerves and the intercostal nerves of the thoracic on the right, and the medial sympathetic terminal nerve

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endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and the external intercostal muscles insertions at the right 3rd rib.

Operation: Transection of the unmyelinated sensory terminal nerve endings of the lower thoracic nerve, long thoracic nerve and intercostal nerves on the 3rd rib on the right, and the medial sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the insertions of the external oblique muscle, serratus anterior muscle and the external intercostal muscles at the right 3rd rib using a OWL radiofrequency generator with a SMK-TC thermocouple electrode.

Description of procedure:

The surgical area was prepped and draped in the normal fashion for this type of procedure.

1.0 cc of 5% marcaine solution was injected into the tissue with the point of the needle being held in contact with the bone and periosteum. An SMK-C (5) 5 cm insulated cannula with 4mm working end was then inserted into the tissue until it was in contact with the bone, at the medial aspect of the 3rd rib on the right with the solid stylet in place. The solid stylet was removed from the SMK-C (5) insulated cannula and an SMK-TC (5) thermocouple electrode was inserted in its place. The position of the tip of the cannula and the electrode was evaluated under fluoroscopy. The position of the tip was found to be in the desired place to perform the intended cautery. The Owl radiofrequency generator was turned on and the mode selector knob was set on stim mode. The output lever switch was turned on. The frequency was set at 2 Hertz. The stimulation voltage knob was slowly advanced to 2 1/2 volts. Attention was directed to see if any motor nerves were being stimulated, which is manifested by twitching muscles in that area. Close observation revealed no reaction. The voltage stimulation knob was returned to zero. The output lever switch was turned off. The mode selector knob was turned to lesion. The output lever switch was again turned on. The RF power knob was slowly advanced until the temperature reached 80 degrees centigrade for 60 seconds. The RF power knob was returned to zero. The output lever switch was turned off.

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The entire procedure was performed 8 times. Each time the SMK-TC thermocouple electrode and the SMK-C insulated cannula were withdrawn, reinserted and redirected into an unrelated tissue track to independently create another lesion. Reevaluation by fluoroscopy and stimulation to determine that the new location was appropriate and distinctly different from any prior lesion placement. The 8 lesions were arranged in a linear alignment to create a horizontal row, medial and lateral to the guide needle, with even distribution while in contact with the osseous surface for the purpose of pain reception ablation of the unmyelinated sensory terminal nerve endings (sprouts) of the terminal branches of the lower thoracic nerve, long thoracic nerve, intercostal nerve and the medial sympathetic terminal nerve endings (sprouts) of the branches of the thoracic sympathetic ganglion in the external oblique muscle, serratus anterior muscle and external intercostal muscle on the 3rd rib on the right. A total of 8 procedures were performed on the medial aspect of the right 3rd rib.

An Owl generator, with an automatic timer was utilized. The timer was set to 70 seconds. The rise of the thermotrol to an 80 degree temperature was achieved in a gradual manner, usually taking 5-10 seconds. The temperature was held for one complete minute. The lesions numbers were recorded in numerical order and documented in the patients records. Respectively, the following reflects the record of the lesions performed on the patient as recorded by the surgeon in the operative notes. Because the Owl generator utilizes an automatic timer, each lesion has identical timing. To conform with the operative notes as written by the surgeon, who places a check next to each lesion number as it is performed, a similar list follows to reflect the operative notes.

- | | |
|------|------|
| 1. ✓ | 6. ✓ |
| 2. ✓ | 7. ✓ |
| 3. ✓ | 8. ✓ |
| 4. ✓ | |
| 5. ✓ | |

Surgical Completion

Dianna was given an appropriate review of post-operative instructions, including administration of pain and antibiotic medication, application of cold

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pak, and additional directions regarding observance of any untoward reactions (fever, bleeding, excessive swelling) from surgery with advisement to call immediately. All muscles were functioning normally, special care was taken to evaluate the patient's breathing, and the patient was dismissed. Dianna has a scheduled future appointment with The Pain Center.

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Operative Report

Name of Patient: Dianna Berry

Date of Operation: 5-25-05

Surgeon: Dr. Paul Palmerio

Time Started: 11:30 am

Time Completed: 12:30 pm

Area of Surgery: Spinous process of C7 on the right, to the unmyelinated sensory terminal nerve endings (sprouts) of the C7 nerve root and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the cervical sympathetic ganglion in the insertions of the spinalis cervicis, interspinalis cervicis, splenius capitus and semi-spinalis cervicis muscles

Total # of Procedures: 8

Total # of Lesions: 8

Fluoroscopic evaluation: 8 views

Length of Cannula: 5 cm

Anesthesia: Marcaine 0.5%, 4.5 cc

Medical History: Dianna reports that her worst pain is in her lower back, hip, jaw, ears, neck, and shoulder. The pain is described as constant and pulsating. The pain starts in her neck and radiates to her head. The pain occurs when she wakes up, sitting, reading, and while sleeping. Dianna gets headaches 2 times a week, they are in the back of her head on the right. Her jaw pain occurs also when she eats, yawn, swallow, and chew. She has pain in her neck when she raises her arms and lifts anything.

Dianna's lower back pain and hip pain hurt the most when she bends down or twist. When the pain starts in her back then radiating to her hip and leg. Dianna has had these areas of pain for 6 years.

Dianna was seen by Dr. Santelli, chiropractor and Dr. Heine, MD. She had a MRI done of her neck and shoulder, results are unknown.



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Pre-operative interview: Dianna was interviewed and the procedure was re-explained. An update of the original chief complaints of the patient were: right shoulder pain 3 out of 10 to a 1-2 out of 10 (intermittent), right neck from a 3 out of 10 to a 1 out of 10, and right anterior shoulder pain 1 out of 10. Dianna reported that the prior radiofrequency procedure reduced her right 3rd rib medial pain. She follows sleeping position.

The most prominent area of tenderness that correlated with the existing chief complaints was determined during the palpation examination and selected. A fluoroscopic picture demonstrated that the tender area was the region of the spinous process of C7 on the right. A prognostic block at the spinous process of C7 on the right was performed under fluoroscopic guidance with a limited volume of anesthetic solution, 1 cc, to prevent the masking of any surrounding structures. The prognostic block performed at the spinous process of C7 on the right decreased the right upper trapezius pain from 2 out of 10 to a 0 out of 10. Evaluation of the appropriate indications for surgery was completed by the comprehensive relief of associated pain patterns confirming the success of the prognostic block.

Pre-operative Diagnosis:

(1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the C7 nerve root on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the cervical sympathetic ganglion in the insertions of the spinalis cervicis, interspinalis cervicis, splenius capitus and semi-spinalis cervicis muscles at the C7 spinous process.

Post-operative Diagnosis:

(1) Neuropathy of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the C7 nerve root on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the cervical sympathetic ganglion in the insertions of the spinalis cervicis, interspinalis cervicis, splenius capitus and

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semi-spinalis cervicus muscles at the C7
spinous process.

Operation: Transection of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the C7 nerve root on the right, and the bilateral sympathetic terminal nerve endings (sprouts) of the branches of the cervical sympathetic ganglion in the insertions of the spinalis cervicis, interspinalis cervicis, splenius capitus and semi-spinalis cervicus muscles at the C7 spinous process, using a RFG-8 radiofrequency generator with a SMK-TC (5) thermocouple electrode.

Description of Procedure:

The head was prepped and draped in the normal fashion for this type of procedure.

1.0 cc of 5% marcaine solution was injected into the tissue with the point of the needle being held in contact with the bone and periosteum. An SMK-C (5) 5 cm insulated cannula with 4mm working end was then inserted into the tissue until it was in contact with the bone at the site of the terminal end of the spinous process of C7 on the right with the solid stylet in place. The solid stylet was removed from the SMK-C (5) insulated cannula and an SMK-TC (5) thermocouple electrode was inserted in its place. The position of the tip of the cannula and the electrode was evaluated under fluoroscopy. The position of the tip was found to be in the desired place to perform the intended cautery. The RFG-8 radiofrequency generator was turned on and the mode selector knob was set on stim mode. The output lever switch was turned on. The frequency was set at 2 Hertz. The stimulation voltage knob was slowly advanced to 2 1/2 volts. Attention was directed to see if any motor nerves were being stimulated, which is manifested by twitching muscles in that area. Close observation revealed no reaction. The voltage stimulation knob was returned to zero. The output lever switch was turned off. The mode selector knob was turned to lesion. The output lever switch was again turned on. The RF power knob was slowly advanced until the temperature reached 80 degrees centigrade for 60 seconds. The RF power knob was returned to zero. The output lever switch was turned off. The mode selector switch was turned off.

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The entire procedure was performed 8 times. Each time the SMK-TC (5) thermocouple electrode and the SMK-C (5) insulated cannula were withdrawn, reinserted and redirected into an unrelated tissue track to independently create another lesion. Reevaluation by fluoroscopy and stimulation to determine that the new location was appropriate and distinctly different from any prior lesion placement. The lesions were arranged in two rows, parallel to the osseous border of the terminal end of the spinous process, with even distribution while in contact with the osseous surface for the purpose of pain reception ablation of the unmyelinated sensory terminal nerve endings (sprouts) of the branches of the cervical sympathetic ganglion in the insertions of the spinalis cervicis, interspinalis cervicis, splenius capitus and semi-spinalis cervicis muscles. A total of 8 procedures were performed on the right spinous process of the C7 vertebra.

An RFG 8 Radionics generator, with a continuous revolving clock face 60 second timer, was utilized. When the 80 degree C lesion temperature was achieved, the position of the second hand was noted, and the temperature was held for one complete minute. The starting times were recorded and documented in the patient's records. The rise of the thermotrol to an 80 degree temperature was achieved in a gradual manner, usually taking 5-10 seconds. Allowing for the different starting times due to the use of the continuous revolving clock face 60 second timer, the differences in time of each lesion production at various sites, pain elicitation, patient movement, operator observance and monitoring of treatment protocol, the starting times may vary from lesion to lesion. The starting times of the 60 second cycles for each lesion are as follows:

1. 15	6. 20
2. 25	7. 0
3. 35	8. 10
4. 15	
5. 20	

RADIOFREQUENCY

RFS

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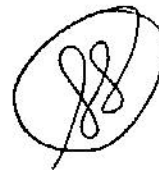
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Surgical Completion

Dianna was given an appropriate review of post-operative instructions, including administration of pain and antibiotic medication, application of cold pak, and additional directions regarding observance of any untoward reactions (fever, bleeding, excessive swelling) from surgery with advisement to call immediately. All muscles were functioning normally and the patient was dismissed. Dianna has a scheduled future appointment with The Pain Center.

TPC/kd



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5-25-05

Re: Dianna Berry

To whom it may concern:

I have thoroughly read and reviewed all prior reports and treatment records of this patient that are presently available. Dianna presents today with a complaint of pain in the right side of neck. She states that the pain in her right side of her neck is a 3 out of 10. Her last RFS was to her right 3rd rib medial. Today, we elected to treat the right side of her neck.

The procedure for performing diagnostic blocks as well as the radiofrequency therapy itself, alternative therapies and possible complications were discussed with the patient. Then, Dianna agreed to undergo a prognostic block. The most tender area was found to be the right C7 spinal process. The skin over this area was anesthetized with a skin wheel of half-percent Marcaine. A 25-gauge needle was advanced through the skin wheel, through the tissue, under fluoroscopic examination in this area. One cc of half-percent Marcaine was deposited, and within 3 minutes of the placement of this local anesthetic, Dianna expressed that the pain had decreased from a 3 out of 10 to a 1 out of 10.

This response is interpreted as a significant response to the placement of the local anesthetic. It is also concluded that an injury in that area is the cause of either all or some of the pain that the patient was complaining about. That response is certainly consistent with the ingrowth of nerve endings also known as sprout formation which was described by Wayne B. Leadbetter, MD, in the Journal Clinics In Sports Medicine, volume 11 #3 of July 1992. Such nerve ingrowth was also described by AJ Freemont, et al, in The Lancet Journal, volume 350 pages 198-181 in 1997. Tendon and ligament insertion injuries have been described as a source of possible musculoskeletal pain by Peter D. Palesy in the Journal Of Cranial Mandibular Practice, volume 15 #3 of July 1997.

Therefore, the radiofrequency procedure was recommended to Dianna, who did consent to undergo such therapy. Utilizing 4.5 cc of half-percent Marcaine, 8 radiofrequency lesions were produced in the manner described earlier by Horst Blume, et al.

RADIOFREQUENCY
RFS

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Dianna tolerated this procedure well, with the plan to return in one week's time for further evaluation. I concur that the diagnosis of muscle injury is triggering the pain. The previous radiofrequency procedures have successfully reduced pain and it has been determined that it is appropriate to continue with the same treatment plan.

Thank you,

Dr. Paul Palmerio

Dictated not read
PP/kd

ET